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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,453	10/22/2003	Masato Yamada	SUG-174-USAP	4848
28892	7590	10/18/2005		
SNIDER & ASSOCIATES P. O. BOX 27613 WASHINGTON, DC 20038-7613			EXAMINER KEBEDE, BROOK	
			ART UNIT	PAPER NUMBER
			2823	

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/690,453

Applicant(s)

YAMADA ET AL.

Examiner

Brook Kebede

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 July 2005.  
2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 19-33, 49-57 and 80-90 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 19-33, 49-57 and 80-90 is/are allowed.  
6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claims 31, 32, 33, 49, 81, 82 and 88 are objected to because of the following informalities:

Claim 31 recites the limitation “In” in line 6. The examiner respectfully suggests changing “In” to --indium--. Appropriate correction is required.

Claim 32 recites the limitation “In” in line 7. The examiner respectfully suggests changing “In” to --indium--. Appropriate correction is required.

Claim 33 recites the limitation “In” in line 3. The examiner respectfully suggests changing “In” to --indium--. Appropriate correction is required.

Claim 49 recites the limitation “a bonding-use transparent conductive oxide layer” in line 9. The examiner respectfully suggests changing “a” to --the-- in order to establish proper antecedent basis. Appropriate correction is required.

Claim 81 recites the limitation “meta layer” line 4. The examiner respectfully suggests changing “meta layer” to --**metal** layer--. Appropriate correction is required.

Claim 82 recites the limitation “diffusion locking ” in line 2. The examiner respectfully suggests changing “diffusion locking” to --diffusion **blocking**--. Appropriate correction is required.

Claim 88 recites the limitation “being assumed” in line 13. However, assumption is not a definite language. Applicants are respectfully requested to make changes in the claim language that is consistent with previous amendment. Appropriate correction is required.

Claim 88 recites the limitation “intended for being” in line 14. However, intention is not a definite language. Applicants are respectfully requested to make changes in the claim language that is consistent with previous amendment. Appropriate correction is required.

***Allowable Subject Matter***

2. Claims 19-33, 49-57 and 80-90 are allowed over prior art of record.
3. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record neither anticipates nor renders obvious the claimed subject matter of the instant application as a whole either taken alone or in combination, in particular, prior art of record does not teach “a bonding step for bonding the light-emitting layer portion and the transparent conductive semiconductor substrate while placing the substrate-bonding conductive oxide layer in between, to thereby produce a substrate bond in which the layer for becoming the contact layer is disposed so as to contact with the substrate-bonding conductive oxide layer,” as recited in claim 19, “a bonding step for bonding the light-emitting layer portion and the transparent conductive semiconductor substrate while placing the substrate-bonding conductive oxide layer in between, to thereby produce a substrate bond,” as recited in claim 21, “a transparent conductive oxide layer forming step for covering a separation-side main surface, which is defined as the main surface on the light-emitting layer portion side exposed after the separation of the light-emitting-layer-growing substrate, with a transparent conductive oxide layer also available as a transparent electrode for applying voltage to the light-emitting layer portion; and a contact layer forming step for forming a layer for becoming a contact layer for reducing junction resistance of the transparent conductive oxide layer on the separation-side main surface prior to the transparent conductive oxide layer forming step,” as recited in claim 22,

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“a metal layer forming step for forming a metal layer on a first main surface side of the conductive substrate; a bonding-use transparent conductive oxide layer forming step for forming a bonding-use transparent conductive oxide layer on the first main surface side of the light-emitting layer portion; and a bonding step for bonding the conductive substrate and the light-emitting layer portion so as to allow the metal layer to contact with the bonding-use transparent conductive oxide layer,” as recited in claim 49, “forming a diffusion-blocking layer, which is composed of an inorganic conductive material, and is provided for blocking diffusion of components derived from the device substrate into the main metal layer, on the surface of the device substrate on the side to which the compound semiconductor layer is to be bonded; forming the main metal layer on at least either one of the second main surface of the compound semiconductor layer, and the main surface of the diffusion-blocking layer formed on the device substrate; and thereafter bonding the device substrate and the compound semiconductor while placing the diffusion-blocking layer and the main metal layer in between,” as recited in claim 80, “disposing a first Au-base layer for becoming the main metal layer and containing Au as a major component on a bonding-side surface of the compound semiconductor layer, where the bonding-side surface is the main surface of the compound semiconductor layer opposite to that serves as the light extraction surface; disposing a second Au-base layer for becoming the main metal layer and containing Au as a major component on a bonding-side surface of the device substrate, where the bonding-side surface [is] the main surface of the device substrate located on the light-emitting layer portion side,” as recited in claim 88.

Claims 23-33, 50-57, 81-87, 88 and 90 are also allowed as being directly or indirectly dependent of the allowed independent base claim.

***Response to Arguments***

4. Applicants' arguments with respect to claims 19-33, 49-57 and 80-90 have been considered but are moot in view of the allowable subject matter that set forth herein above.

***Conclusion***

5. This application is in condition for allowance except for the following formal matters:

The formal matter(s) that set forth in Paragraph 1 above should be addressed by applicant(s) prior pass the instant application to issue.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

***Correspondence***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brook Kebede whose telephone number is (571) 272-1862. The examiner can normally be reached on 8-5 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Brook Kebede  
Examiner  
Art Unit 2823

BK  
October 17, 2005